

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

CONDITIONAL MAJOR No. F-06-006R1
TOYO AUTOMOTIVE PARTS
521 PAGE DRIVE BOWLING GREEN, KY 42134.
OCTOBER 26, 2007

YELENA GOLDIN, REVIEWER
SOURCE ID: 021-213-00046
AGENCY INTEREST: 40307
ACTIVITY: APE20070002

SOURCE DESCRIPTION:

The Toyo Automotive Parts (USA), Inc. facility manufactures automotive anti-vibration components. To manufacture this product Toyo:

- 1) shot blasts metal,
- 2) applies zinc phosphates to the blasted metal,
- 3) applies an adhesive to the metal,
- 4) molds the metal via injection molding, and
- 5) optionally buffs, swages and/or paints the part.

Other processes such as injection molding and assembly are also part of Toyo's manufacturing process. The Division issued a Conditional Major / Synthetic Minor construction and operating air permit, permit F-01-013, on July 3, 2001 to Toyo Tire and Rubber Company, Limited. The Division received an application for a name change to Toyo Automotive Parts (USA), Incorporated on March 12, 2002 and the Division records were subsequently updated to reflect the requested name change. Permit F-01-013 was revised on September 26, 2003 (F-01-013 Revision 1) and on September 15, 2005 (F-01-013 Revision 2). Off-Permit change letters were issued by the Division on September 15, 2004 and March 30, 2005. A permit renewal/construction application was received on December 16, 2005. The renewal application includes information on the addition of three liquid filled cell machines. An application for minor revision was received on August 13, 2007.

MINOR PERMIT REVISION 1: ADDITION OF ADHESIVE TUMBLE SPRAY MACHINE

On August 13, 2007 Toyo proposed to install Adhesive Tumble Spray Machine (TBS-01), which will apply paint to automotive parts via tumbling in a basket. Emissions from TBS-01 will be captured via a permanent total enclosure and ducted to the existing regenerative thermal oxidizer unit. Emissions from TBS-01 are reflected in the Emissions Summary table.

COMMENTS:

The emissions from EP01, Boilers 1-1 and 1-2 are calculated using emission factors from AP 42, Tables 1.4-1 and 1.4-2. These boilers are subject to 401 KAR 59:015, New Indirect Heat Exchangers.

EP6, EP9, EP10, EP34 and EP35 are adhesive spray coating machines. These emission points are subject to 401 KAR 59:010, New Process Operations. The Particulate Matter (PM) and Particulate Matter 10 microns or less (PM₁₀) emissions from these points are determined by material balance. A transfer efficiency of 70% adhesive to metal is used in determining PM/PM₁₀ emission factors. These emission points are equipped with exhaust filters to control PM/PM₁₀ emissions. A filter control efficiency of 90% is used in calculating PM/PM₁₀ emissions.

COMMENTS (CONTINUED):

EP11, EP13, EP14 and EP15 are roll adhesive coating machines. There are no estimated PM/PM₁₀ emissions from these points.

EP7 is a dip adhesive coating machine. There are no estimated PM/PM₁₀ emissions from this point.

EP6, EP7, EP9, EP10, EP11, EP13, EP14, EP15, EP34 and EP35 are located in a permanent total enclosure (PTE). The PTE validation tests were conducted on September 8 and October 27, 2004. The PTE tests were approved by the Division on January 13, 2005. A performance demonstration test was conducted on the RTO to determine VOC destruction efficiency on August 13, 2002. A destruction efficiency of 99.6% was determined. The test was approved by the Division on September 26, 2002. VOC and volatile Hazardous Air Pollutant (HAP) emissions from these points are calculated by material balance assuming the entire content of VOC and volatile HAP present in the adhesive is emitted. The calculations are made with 100% of the emissions captured and 99.6% of the emissions incinerated and the remaining 0.04% being emitted. No later than 180 days from the issuance of permit F-06-006, the RTO must be retested to determine VOC destruction efficiency. The new destruction efficiency must be subsequently used to determine VOC and volatile HAP emissions.

EP36 and EP37 are each a manual spray machine used to apply paint. These emission points are subject to 401 KAR 59:010, New Process Operations. The PM and PM₁₀ emissions from these points are determined by material balance. A transfer efficiency of 70% paint to the metal and rubber parts is used in determining PM/PM₁₀ emission factors. These emission points are equipped with exhaust filters to control PM/PM₁₀ emissions. A filter control efficiency of 90% is used in calculating PM/PM₁₀ emissions. VOC and volatile HAP emissions from these points are calculated by material balance assuming the entire content of VOC and volatile HAP present in the paint is emitted.

EP38 is three liquid filled cell machines. The liquid filled cell machines inject glycol fluid into rubber automotive suspension bushings. It is estimated that the amount of residual fluid on the bushing exterior following injection will be less than 1% and 99% will be contained with the part, based on the same process currently being conducted in Japan. It is assumed that all VOC and volatile HAP present in the residual glycol fluid on the bushing exterior is emitted. Liquid filled cell (LFC) machine #1 is projected to be constructed in July of 2006. LCF machines #2 and #3 are projected to be constructed in October of 2006.

EP42 is an adhesive tumble spray machine (TBS-01), which will apply paint to automotive parts via tumbling in a basket. Emissions from the TBS-01 will be captured via a permanent total enclosure and ducted to the existing regenerative thermal oxidizer (RTO) unit. This emission point is projected to be constructed in October of 2007.

Insignificant Activity (IA) 1 is two dry blast machines equipped with bag filters. PM emissions are based on chapter 13.2.6 of AP-42. A controlled PM emission factor of 0.69 lbs/1,000 lbs of shot has been assumed. This point is subject to 401 KAR 59:010.

IA5 is 8 oil dipping tanks. The tanks are used to apply rust inhibiting oil to buffed parts. Oil dipping for lubrication in the manufacturing process is assumed to have a 100% VOC emission factor.

IA6 is 73 vertical injection molding machines, 2 horizontal injection molding machines and 1 dual

COMMENTS (CONTINUED):

stage injection molding machine. Emissions from the injection molding machines are based on AP-42 draft estimates for tire rubber extrusion. VOC emissions have been assumed to be 0.0000325 lbs/lb of rubber extruded. PM emissions have been neglected since the small amount formed will likely settle in the work environment. VOC emissions from mold release used at the injection molding machines are estimated assuming all VOC in the mold release is emitted.

IA9 is 2 arc welders. PM emissions from arc welding have been assumed to be 57.0 lbs/1,000 lbs of electrode consumed. This is based on the AP-42 chapter 12.19 emission factor for electrode type E11018. This point is subject to 401 KAR 59:010.

IA10 is Bushing Spin Painting. The entire content of VOC, PM/PM₁₀ and HAP emissions in the paint are assumed to be emitted. This emission point utilizes solvent based paints that is applied by brush.

IA11 is 0.6 MMBtu/hr hook burn off oven. Emissions are generated only from the combustion of natural gas.

IA12 is 150L Painter. It is manual brush painting operation similar to IA10. Exhaust from the 150L Painter will be routed to the RTO unit in an effort to increase ventilation draw from the paint area. Regardless of RTO control, emissions from IA12 are insignificant.

The emissions of toxic air pollutants from Toyo were evaluated using the SCREEN3 air dispersion model. It was assumed that all pollutants are emitted from a single stack for the purpose of the modeling. The stack parameters used are those of the RTO stack. The concentrations resulting from the modeling were found not to exceed either the Prioritized Dose Response Values (PDRVs) or Acute Dose Response Values (ADRVs) recommended by the EPA Office of Air Quality Planning and Standards (OAQPS). The data used for the toxics review can be found at

<http://www.epa.gov/ttn/atw/toxsource/table1.pdf>

EMISSION AND OPERATING CAPS DESCRIPTION:

Toyo Automotive Parts (USA), Incorporated has accepted federally enforceable emission caps of ninety (90) tons per year for VOC, nine (9) tons per year for single HAP and twenty-two and a half (22.5) tons per year for combined HAP. These emission caps preclude the applicability of a case by case MACT or 401 KAR 63:002 (vvv) 63.4480 to 63.4581 (Subpart PPPP), "National Emission Standards for Hazardous Air Pollutants for Surface Coating of Plastic Parts and Products".

PERIODIC MONITORING:

Emission Point Number(s)	Description	Monitoring Requirement(s)
EP1	Two 4.185 MMBTU/hr Natural gas fired boilers	Monitor natural gas usage on a monthly basis.
EP6, EP9, EP10, EP34 and EP35	Adhesive spray coating machines	Visual inspection of exhaust filters daily during coating operations. Qualitative visual observation of opacity weekly. Maintain purchase orders/invoices for all VOC/HAP containing materials. Calculate VOC/HAP emissions monthly.
EP11, EP13, EP14, EP15	Adhesive roll coating machines	Maintain purchase orders/invoices for all VOC/HAP containing materials. Calculate VOC/HAP

		emissions monthly.
EP7	Adhesive dip coating machine	Maintain purchase orders/invoices for all VOC/HAP containing materials. Calculate VOC/HAP emissions monthly.
Emission Point Number(s)	Description	Monitoring Requirement(s)
EP36, EP37 and EP42	Paint spray coating machines	Visual inspection of exhaust filters daily during coating operations. Qualitative visual observation of opacity weekly. Maintain purchase orders/invoices for all VOC/HAP containing materials. Calculate VOC/HAP emissions monthly.
EP38	Liquid filled cell machines	Maintain purchase orders/invoices for all VOC/HAP containing materials. Calculate VOC/HAP emissions monthly.
EP6, EP7, EP9, EP10, EP11, EP13, EP14, EP15, EP34 and EP35	Emission points within a permanent total enclosure vented to a regenerative thermal oxidizer	Monitor pressure drop across the enclosure. Monitor combustion chamber temperature. See Section E of permit F-06-006 for more details.

OPERATIONAL FLEXIBILITY:

The source is not restricted as to hours of operation or quantity of product produced while remaining within the caps above.

CREDIBLE EVIDENCE:

This permit contains provisions, which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.

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